IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

On page 1, before paragraph [1001], please insert the following paragraph:

Claim of Priority under 35 U.S.C. §120

The present Application for Patent is a Continuation and claims priority to Patent No. 6,324,172, entitled "Method Of Rate Allocation In A Data Communications Network," issued November 27, 2001, and assigned to the assignee hereof and hereby expressly incorporated by reference herein.

On page 1, please replace paragraph [1002] with the following paragraph:

Channel capacity, a basic limitation of any system for data communications, may be defined as the rate at which information can be passed from one end of a transmission channel to the other, given some mode of transmission and some performance criteria (e.g., binary phase-shift keying modulation of a 1.9-GHz RF carrier using polar NRZ signaling, with a bit-error rate of 10^{-5}). The rate at which information may be transferred from one point to another cannot exceed the ability of the particular method and medium of transmission to convey that information intelligibly. It follows that the rate at which a data producer outputs data into a transmission channel cannot exceed the channel capacity, commonly measured in units of information per units of time (e.g., Kbits/s).

On page 2, please replace paragraph [1004] with the following paragraph:

Two or more producers may wish to transmit information over the same channel. If, for example, the producers are also physically separated, then their transmissions may not be coordinated with each other. A data collision occurs when the several transmissions arrive at the consumer having together exceeded the available channel capacity. (Note that in a time-division multiple-access or TDMA wireless system, the channel capacity available to any producer may change over time as a function of the number of producers using the same frequency channel, in

that the available capacity will be zero during any period when another producer is using the channel.) Such a collision causes all of the frames being transmitted to become irretrievably corrupted, no matter how complete their transmissions were to that point. If re-transmission is required (i.e., if the system cannot otherwise compensate for the loss of data), then the producers must re-send these frames in their entirety. Therefore, one may clearly see that data collisions directly and dramatically reduce the effective channel capacity.

On page 3, please replace paragraph [1007] with the following paragraph:

Alternatively, the rates of data production may vary significantly from one moment to the next; i.e., the data traffic may be bursty. Traffic on high speed networks for data communications, for example, tends to be bursty. Static allocation techniques are not well suited for such environments. On one hand, data transmission applications are usually more tolerant of delays than voice transmission applications, so a producer will not usually require the regulated level of access to the channel which a static scheme provides. On the other hand, while backlogged and therefore outdated voice information may simply be discarded by the producer before transmission, discarding data information whose transmission has been delayed is not usually a viable option. Therefore, if a producer's store of data information should begin to accumulate faster than its buffering capacity can handle, the producer will temporarily need to use more of the channel capacity than it has been assigned. Even if other producers are currently idle, however, and plenty of channel capacity is presently available, a static scheme will not accommodate the temporary redistribution of capacity needed in this situation.

On page 4, please replace paragraph [1009] with the following paragraph:

Now consider FIG. 2, in which channel capacity is allocated dynamically according to each producer's ability to use the channel during any given quarter-second. At time 0, only producer A has data to transmit. Therefore, we allocate the entire channel capacity of 200 Kbits/s to producer A, and it completes its task in 0.25 s, for a 75% savings over the static allocation scheme. At time 0.5 s, producers B and C each have data to transmit, so we allocate 50% of the channel capacity to each one, and they complete their tasks in 0.5 s, for a savings of 50%. (Note that a more optimal scheme would allow either B or C to use the entire channel,

completing transmission in 0.25 s. The other producer would still complete in [[.25]] 0.5 s, using the entire channel between times 0.75 and 1.0 s.)

On page 5, please replace paragraph [1012] with the following paragraph:

For all of their advantages, however, dynamic allocation schemes may be much more complicated to implement than static ones. In static allocation, a fixed set of rules is developed and applied, and the only task during operation is to ensure compliance with these rules. In dynamic allocation, on the other hand, the rules must adapt continually to match a changing environment. An implicit requirement for a dynamic scheme, therefore, is a way for the allocation mechanism to acquire knowledge about the environment: i.e., which of the producers has data to transmit, and how much.

On page 9, please replace paragraph [1021] with the following paragraph:

One problem with using a request-grant system is that a producer may not know in advance how much of the channel capacity it will need. Consider a producer made up of a buffer memory unit connected to a wireless telephone through, e.g., a PCMCIA interface. Ideally, the telephone will remain off-the-air until the buffer is full, at which time it will request permission to transmit the contents of the buffer at maximum rate in a single burst. Unfortunately, unless the buffer unit and the telephone are purchased as a single device, the capacity of the buffer will generally not be known to the telephone. Also, there may be an additional store of data ready for transmission and waiting on the other side of the buffer. Therefore, the telephone typically will not know how much data is actually available for transmission, and consequently it will not know what rate to request.

On page 9, please replace paragraph [1023] with the following paragraph:

A novel method is disclosed for the efficient allocation of the capacity of a common channel among a set of data producers. In this method, a control unit issues an allocation grant (i.e., a maximum permissible transmission rate) to each producer which is based on the extent to which that producer has used a previous allocation grant. The method is applicable to any system wherein the simultaneous use of a common channel by more than one producer may

cause a data collision. Several variations of the method, using alternate methods of capacity estimation and distribution, are also disclosed.

On page 13, please replace paragraph [1047] with the following paragraph:

Either of these schemes may be further modified by incorporating distinctions between various groups of producers. For example, some identifiable group of producers may be expected to use a lower rate on average than other producers, whether because these producers are unable to produce and/or transmit data above a certain rate, or because the particular application in which they are used is generally less transmission-intensive (e.g., POS terminals). In such cases, as illustrated in FIG. 7, different basic rates may be used in reserving channel capacity for different producers.